Course: PHYS 491/493
Term: Fall 2020
Room: Zoom & HBH227 when in person
Class: M, 4:00-6:50

PHYSICS 491/493 UNDERGRADUATE RESEARCH AND SEMINAR

INSTRUCTOR CONTACT INFORMATION

Instructor: Karl Ecklund
Office: Herman Brown Hall 232C
Phone: 713-348-2037
Email: Karl.Ecklund@rice.edu
Office Hours: Wed via Zoom 3-4 pm or by appointment; feel free to contact the instructor at any time.

COURSE OBJECTIVES AND LEARNING OUTCOMES

Physics 491 (Undergraduate Research, 2 credit hours) is conducted under the direction of a faculty member, usually affiliated with the Department of Physics and Astronomy, or with a faculty member engaged in applied physics research in another Department. PHYS 493 (1 credit hour) is Undergraduate Research Seminar, where students have the opportunity to learn written and oral communications skills by writing proposals, reports, and at the end of the academic year, a final undergraduate thesis, and by making oral presentations during class meetings. Students will also learn to "referee" their classmates written documents and oral presentations. The goal is to learn the communications skills of a professional physicist. Students must be enrolled in PHYS 491 to enroll in PHYS 493.

REQUIRED TEXTS AND MATERIALS

There are no required materials.

EXAMS, PAPERS, AND GRADE POLICIES

There are no exams in either PHYS 491 or 493. The grade received in PHYS 491 will depend on the significance and degree of involvement in the research project. In PHYS 493, students will be expected to attend and participate in class meetings, submit a written research proposal, a written progress report, prepare and make oral presentations, and critique other students work. Grades will be based on participation, and quality of the oral presentations and written work.

CLASS MEETINGS

PHYS 493 class meetings are scheduled for Mondays between 4:00p and 6:50p, as needed. The class may not meet every week, and the meeting duration will sometimes be less than the full allotted time.

ADVANCE PREPARATION

Students should begin, and ideally complete the process of finding a research advisor before the semester begins.

RICE HONOR CODE

All students will be held to the standards of the Rice Honor Code. If you are unfamiliar with the details of this code and how it is administered, you should consult the Honor

System Handbook at http://honor.rice.edu/honor-system-handbook/. Particular emphasis will be placed on properly citing other scientific work, and the avoidance of plagiarism.

DISABILITY SUPPORT SERVICES

If you have a documented disability that may affect academic performance, you should: 1) make sure this documentation is on file with Disability Resource Center (Allen Center, Room 111 / adarice@rice.edu / x5841) to determine the accommodations you need; and 2) meet with me to discuss your accommodation needs.

SYLLABUS CHANGE POLICY

This syllabus is only a guide for the course and is subject to change with advanced notice.

COURSE SCHEDULE AND OUTLINE

Date	Class meeting topic
Aug 24	Lecture Course Introduction: senior research and advisors
Aug 31	Lecture Preparing a research proposal
Sep 7	Labor Day – no class meeting
Sep 14	Discussion of research topics
Sep 21	Written proposals due
Sep 21	Lecture Preparing and giving oral presentations
Sep 28	Research Proposal presentations
Oct 5	Research Proposal presentations
Oct 12	Research Proposal presentations (if req.)
Oct 19	Lecture Practical research tips: adjusting the plan
Oct 26	Discussion on writing up research results
Nov 2	Fall research progress report presentations
Nov 9	Fall research progress report presentations
Nov 16	Fall research progress report presentations
Dec 4	End of Semester Research Reports Due